UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,086	10/28/2003	Bryan A. Lauer	Lauer 2 LUTZ 2 00242	4158

7590 02/06/2008

Richard J. Minnich, Esq.
Fay, Sharpe, Fagan, Minnich & McKee, LLP
Seventh Floor
1100 Superior Avenue
Cleveland, OH 44114-2518

EXAMINER	
ALIA, CURTIS A	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
02/06/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,086	LAUER, BRYAN A.	
	Examiner	Art Unit	
	Curtis Alia	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24 and 26-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24 and 26-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment sent 13 November 2007 has been entered and considered. Claims 1-24 and 26-29 are still pending, with claims 1, 6, 16, 17 and 26 being independent.

Allowable Subject Matter

1. The indicated allowability of claims 1-24 and 26-29 is withdrawn in view of the newly discovered reference(s) to Curcio et al. and Arye. Rejections based on the newly cited reference(s) follow.

Claim Objections

2. Claims 1, 9 and 16 are objected to because of the following informalities:

For claim 1, lines 14-15, the claim recites "the allowable subset that ***that*** is greater." It is suggested to remove the redundant word.

For claim 9, line 6, it is suggested to change "a lowest supported value" to --- a lowest network element supported value ---. The same is true for claim 16, lines 14 ("lowest value") and 18.

For claim 16, line 8, the phrase "temporary working value from among ***of*** the requested maximum bitrate attribute value" should be corrected.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-12, 16-21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curcio et al. (US 2004/0057420) in view of Arye (US 7,003,794).

For claim 1, Curcio discloses a method comprising receiving a requested maximum bitrate attribute value (see paragraph 76, lines 4-9, client sends the request to the streaming server to perform bandwidth adaptation, also paragraph 77, lines 6-7, maximum bit rate value), determining if a maximum bitrate limit of the subscriber is equal to or greater than a value of a lowest valued member of a set of available maximum bitrate values (see paragraph 94, lines 1-7, a set of content with different bitrates, such as video or audio, are present on the server), offering to provide requested communication services in association with an offered maximum bitrate (see paragraph 94, lines 7-10), and declining the requested communications service if the maximum bitrate limit of the subscriber is not equal to or greater than the value of the lowest valued member of the set of available maximum bitrate values (see paragraph 169, lines 9-15, When the streaming server cannot determine a proper bitrate to send the content to the client at, the server may take appropriate action, which the examiner interprets as including, but not

limited to, denying the request if the requested maximum bitrate limit it too low for the server to support).

For claim 1, Curcio does not explicitly teach that if the maximum bitrate limit of the subscriber is equal to or greater than the value of the lowest valued member of the set of available maximum bitrate values, the offered maximum bitrate value being equal to a value of a member of an allowable subset of the set of available maximum bitrate values, the allowable subset consisting of members of the set of available maximum bitrates that have values less than or equal to the maximum bitrate limit, and the offered maximum bitrate being equal to a value of a member of the allowable subset that is greater than or equal to, the lower of the requested maximum bitrate value and the maximum bitrate limit, or has the highest value of the subset. Arye, from the same field of endeavor, teaches the provision of using a content switch and database, wherein the database includes entries for the content being streamed to the client, wherein each database entry includes a lookup table comprising an entry for each secondary multimedia sub-stream associated with that specific content (see figure 4, database 76 and lookup table 78). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide a set of available bitrate values associated with specific content and to provide a specific bit rate between the lowest value available and the highest value available. The subset of values is located within the table 78 of Arye. The teachings of Arye can be implemented into the method of Curcio by including the database and table in the streaming server of Curcio. The motivation to combine these teachings is that when dynamically changing the air-interface bitrate, the corresponding streams of different bitrates can be synchronized to seamlessly stream the lower or higher bitrate content to the user.

For claim 2, Curcio teaches that the method further comprises setting a temporary working value equal to a lowest value selected from among the requested maximum bitrate attribute value and the maximum bitrate limit (see column 94, lines 1-4, requested value is between lowest and highest maximum bitrates available), determining whether the temporary working value is equal to a value of a member of the allowable subset of the set of available maximum bitrate values, higher than the values of all the members of the allowable subset of the set of available maximum bitrate values, between a next higher valued member and a next lower member of the allowable subset of the set of available maximum bitrate values, or lower than the values of all the members in the set of available maximum bitrate values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate), setting the offered maximum bitrate value equal to the temporary working value if the temporary working value is equal to the value of a member of the allowable subset of the set of available maximum bitrate values (see paragraph 94, if the requested value is found, i.e. requested value = temporary working value, then the additional adjustments are not required and that temporary bitrate is to be used), and offering to provide requested communications services in association with the offered maximum bitrate value (see paragraph 94).

For claim 3, Curcio teaches that the method further comprises setting a temporary working value equal to a lowest value selected from among the requested maximum bitrate attribute value and the maximum bitrate limit (see column 94, lines 1-4, requested value is between lowest and highest maximum bitrates available), determining whether the temporary

working value is equal to a value of a member of the allowable subset of the set of available maximum bitrate values, higher than the values of all the members of the allowable subset of the set of available maximum bitrate values, between a next higher valued member and a next lower member of the allowable subset of the set of available maximum bitrate values, or lower than the values of all the members in the set of available maximum bitrate values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate), setting the offered maximum bitrate value equal to a value of the highest valued member of the allowable subset of the set of available maximum bitrate values if the temporary working value is higher than the values of the members of the allowable subset of the set of available maximum bitrate values (see paragraph 94, the next highest bitrate value will be selected, then using additional bandwidth adjustment techniques, the bitrate value is lowered so that it is exactly or close to the desired bitrate value), and offering to provide requested communications services in association with the offered maximum bitrate value (see paragraph 94).

For claim 4, Curcio teaches that the method further comprises setting a temporary working value equal to a lowest value selected from among the requested maximum bitrate attribute value and the maximum bitrate limit (see column 94, lines 1-4, requested value is between lowest and highest maximum bitrates available), determining whether the temporary working value is equal to a value of a member of the allowable subset of the set of available maximum bitrate values, higher than the values of all the members of the allowable subset of the set of available maximum bitrate values, between a next higher valued member and a next lower

member of the allowable subset of the set of available maximum bitrate values, or lower than the values of all the members in the set of available maximum bitrate values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate), setting the offered maximum bitrate value equal to a value of a lowest valued member of the allowable subset of the set of available maximum bitrate values if the temporary working value is lower than all of the values of members of the set of available maximum bitrate values (see paragraph 96, the server could choose the next lowest to the actual available air-interface bandwidth, which is the requested maximum bitrate), and offering to provide requested communications services in association with the offered maximum bitrate value (see paragraph 94).

For claim 5, Curcio teaches that the method further comprises setting a temporary working value equal to a lowest value selected from among the requested maximum bitrate attribute value and the maximum bitrate limit (see column 94, lines 1-4, requested value is between lowest and highest maximum bitrates available), determining whether the temporary working value is equal to a value of a member of the allowable subset of the set of available maximum bitrate values, higher than the values of all the members of the allowable subset of the set of available maximum bitrate values, between a next higher valued member and a next lower member of the allowable subset of the set of available maximum bitrate values, or lower than the values of all the members in the set of available maximum bitrate values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to

achieve the proper requested maximum bitrate), setting the offered maximum bitrate value equal to a value of the next higher valued member of the allowable subset of the set of available maximum bitrate values if the temporary working value is between the next higher and a next lower valued members of the allowable subset of the set of available maximum bitrate values and the next higher valued member is less than or equal to the maximum bitrate limit (see paragraph 94, when a value is requested that is between two available bitrates, the next highest bitrate value will be selected, then using additional bandwidth adjustment techniques, the bitrate value is lowered so that it is exactly or close to the desired bitrate value), and offering to provide requested communications services in association with the offered maximum bitrate value (see paragraph 94).

For claim 6, Curcio discloses a method comprising receiving a requested maximum bitrate attribute value (see paragraph 93, lines 3-8, client sends the request to the streaming server to perform bandwidth adaptation), determining a temporary working value from among the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using other bandwidth adjustment techniques), determining whether the temporary working value is a network element supported value, above all network element supported values, below all network element supported values or between two network element supported values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate), and offering a value in response to the maximum bitrate request based on the determination of whether the

temporary working value is above all network element supported values, below all network element supported values or between two network element supported values (see paragraph 96, a bitrate is chosen from the bitrates supported by the server and additional bandwidth adjustment techniques are employed to raise or lower the bitrate to match the requested bitrate).

For claim 6, Curcio does not explicitly teach the step of determining if a lowest network element supported maximum bitrate value is equal to or less than a maximum bitrate limit associated with the subscriber and if the lowest network element supported maximum bitrate value is equal to or less than the maximum bitrate limit associated with the subscriber. Arye teaches the provision of using a content switch and database, wherein the database includes entries for the content being streamed to the client, wherein each database entry includes a lookup table comprising an entry for each secondary multimedia sub-stream associated with that specific content (see figure 4, database 76 and lookup table 78). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide a set of available bitrate values associated with specific content and to provide a specific bit rate between the lowest value available and the highest value available. The set of network element supported values is located within the table 78 of Arye. The teachings of Arye can be implemented into the method of Curcio by including the database and table in the streaming server of Curcio. The motivation to combine these teachings is that when dynamically changing the air-interface bitrate, the corresponding streams of different bitrates can be synchronized to seamlessly stream the lower or higher bitrate content to the user.

For claim 7, Curcio teaches the step of offering the temporary working value in response to the maximum bitrate request if the temporary working value is a network element supported

value (see paragraph 96, the bitrate is chosen first to the next highest bitrate available, which may be equal to the requested bitrate, wherein no further adjustments are needed since the bitrate requested is supported).

For claim 8, Curcio teaches the step of offering a highest network element supported value in response to the maximum bitrate request if the temporary working value is above all network element supported values (see paragraph 96, the server could choose the bitrate next lowest to the requested bitrate, in the case where the requested bitrate exceeds the highest maximum bitrate).

For claim 9, Curcio teaches the step of offering a lowest supported value in response to the maximum bitrate request if the temporary working value is below all network element supported values (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate is below the lowest maximum bitrate).

For claim 10, Curcio teaches the steps of offering a next higher network element supported value if the temporary working value is between a next higher and a next lower network element supported value and the next higher network element supported value is less than or equal to the maximum bitrate limit (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate could be adjusted to go below the lowest maximum bitrate) and offering the next lower network element supported value if the temporary working value is between a next higher and a next lower network element supported value and the next higher network element supported value is greater than the maximum bitrate limit (see paragraph 96, the server could choose the bitrate next

lowest to the requested bitrate, in the case where the requested bitrate could be adjusted to exceed the highest maximum bitrate).

For claim 11, Curcio teaches the step of offering a next higher network element supported value if the temporary working value is between a next higher and a next lower network element supported value and the next higher network element supported value is less than or equal to the maximum bitrate limit (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate could be adjusted to go below the lowest maximum bitrate).

For claim 12, Curcio teaches the step of offering the next lower network element supported value if the temporary working value is between a next higher and a next lower network element supported value and the next higher network element supported value is greater than the maximum bitrate limit (see paragraph 96, the server could choose the bitrate next lowest to the requested bitrate, in the case where the requested bitrate could be adjusted to exceed the highest maximum bitrate).

For claim 16, Curcio discloses a method comprising receiving a requested maximum bitrate attribute value (see paragraph 93, lines 3-8, client sends the request to the streaming server to perform bandwidth adaptation), determining a temporary working value from among the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using other bandwidth adjustment techniques), determining if the temporary working value is a network element supported value, above all network element supported values, below all network element supported values or between two network element supported values (see

paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate), offering the temporary working value in response to the maximum bitrate request if the lowest value is a network element supported value (see paragraph 96, the bitrate is chosen first to the next highest bitrate available, which may be equal to the requested bitrate, wherein no further adjustments are needed since the bitrate requested is supported), offering a highest network element supported value in response to the maximum bitrate request if the lowest value is above all network element supported values (see paragraph 96, the server could choose the bitrate next lowest to the requested bitrate, in the case where the requested bitrate exceeds the highest maximum bitrate), offering a lowest supported value in response to the maximum bitrate request if the lowest value is below all network element supported values (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate is below the lowest maximum bitrate), offering a next higher network element supported value if the lowest value is between the next higher and a next lower network element supported value and the next higher network element supported value is less than or equal to the maximum bitrate limit (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate could be adjusted to go below the lowest maximum bitrate) and offering the next lower network element supported value if the temporary working value is between the next higher and the next lower network element supported value and the next highest network element supported value is greater than the maximum bitrate limit (see paragraph 96, the server could choose the bitrate next lowest to the

requested bitrate, in the case where the requested bitrate could be adjusted to exceed the highest maximum bitrate).

For claim 16, Curcio does not explicitly teach the step of determining if a lowest network element supported maximum bitrate value is equal to or less than a maximum bitrate limit associated with the subscriber and if the lowest network element supported maximum bitrate value is equal to or less than the maximum bitrate limit associated with the subscriber. Arye teaches the provision of using a content switch and database, wherein the database includes entries for the content being streamed to the client, wherein each database entry includes a lookup table comprising an entry for each secondary multimedia sub-stream associated with that specific content (see figure 4, database 76 and lookup table 78). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide a set of available bitrate values associated with specific content and to provide a specific bit rate between the lowest value available and the highest value available. The set of network element supported values is located within the table 78 of Arye. The teachings of Arye can be implemented into the method of Curcio by including the database and table in the streaming server of Curcio. The motivation to combine these teachings is that when dynamically changing the air-interface bitrate, the corresponding streams of different bitrates can be synchronized to seamlessly stream the lower or higher bitrate content to the user.

For claim 17, Curcio discloses a network element comprising means for receiving a requested maximum bitrate attribute value (see paragraph 93, lines 3-8, client sends the request to the streaming server to perform bandwidth adaptation) and means for offering to provide communication services in association with a maximum bitrate value (see paragraph 94).

For claim 17, Curcio does not explicitly teach selecting the maximum bitrate offered from a subset of a set of supported maximum bitrate values, the subset including only those elements of the set of maximum bitrate values that are equal to or less than the maximum bitrate limit, the selected value being equal to the value of the subset element that is greater than or equal to, the lower of the requested maximum bitrate value and the maximum bitrate limit, or has the highest value of the subset. Arye teaches the provision of using a content switch and database, wherein the database includes entries for the content being streamed to the client, wherein each database entry includes a lookup table comprising an entry for each secondary multimedia sub-stream associated with that specific content (see figure 4, database 76 and lookup table 78). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide a set of available bitrate values associated with specific content and to provide a specific bit rate between the lowest value available and the highest value available. The set of network element supported values is located within the table 78 of Arye. The teachings of Arye can be implemented into the method of Curcio by including the database and table in the streaming server of Curcio. The motivation to combine these teachings is that when dynamically changing the air-interface bitrate, the corresponding streams of different bitrates can be synchronized to seamlessly stream the lower or higher bitrate content to the user.

For claim 18, Curcio discloses that the network further comprises means for determining a temporary working value from among the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using other bandwidth adjustment techniques), means for determining whether the temporary working value is a network element

supported value, above all network element supported values, below all network element supported values or between two network element supported values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate), and means for offering to provide communication services in association with a the temporary working value if the lowest value is a network element supported value (see paragraph 96, a bitrate is chosen from the bitrates supported by the server and additional bandwidth adjustment techniques are employed to raise or lower the bitrate to match the requested bitrate).

For claim 19, Curcio discloses that the network further comprises means for determining a temporary working value from among the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using other bandwidth adjustment techniques) means for determining whether the temporary working value is a network element supported value, above all network element supported values, below all network element supported values or between two network element supported values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate) and means for offering to provide communication services in association with a highest network element supported value if the temporary working value is above all network element supported values (see paragraph 96, the

server could choose the bitrate next lowest to the requested bitrate, in the case where the requested bitrate exceeds the highest maximum bitrate).

For claim 20, Curcio discloses that the network further comprises means for determining a temporary working value from among the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using other bandwidth adjustment techniques), means for determining whether the temporary working value is a network element supported value, above all network element supported values, below all network element supported values or between two network element supported values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate) and means for offering to provide communication services in association with a lowest supported value if the temporary working value is below all network element supported values (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate is below the lowest maximum bitrate).

For claim 21, Curcio discloses that the network further comprises means for determining a temporary working value from among the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using other bandwidth adjustment techniques) means for determining whether the temporary working value is a network element supported value, above all network element supported values, below all network element

supported values or between two network element supported values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate) means for offering to provide communication services in association with a next higher network element supported value if the temporary working value is between a next higher and a next lowest network element supported value and the next higher network element supported value is less than or equal to the maximum bitrate limit (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate could be adjusted to go below the lowest maximum bitrate) and means for offering to provide communication services in association with the next lower network element supported value if the temporary working value is between the next higher and the next lower network element supported values and the next higher network element supported value is greater than the maximum bitrate limit (see paragraph 96, the server could choose the bitrate next lowest to the requested bitrate, in the case where the requested bitrate could be adjusted to exceed the highest maximum bitrate).

For claim 26, Curcio discloses a network element comprising a network interface operative to receive a requested maximum bitrate attribute value directly or indirectly from the user equipment of the subscriber (see paragraph 93, lines 3-8, client sends the request to the streaming server to perform bandwidth adaptation), a second comparator operative to determine a temporary working value equal to the lowest value selected from among of the requested maximum bitrate attribute value and the maximum bitrate limit (see paragraph 94, lines 1-11, the server chooses a bit rate from the available bit rates, which is later increased or decreased using

other bandwidth adjustment techniques), a bitrate value classifier operative to determining if the temporary working value is a network element supported value, above all network element supported values, below all network element supported values or between two network element supported values (see paragraph 94, lines 1-10, the server can now choose a new transmission bit rate that may be higher or lower than the maximum bit rate requested by the client and use additional bandwidth adjustment techniques to achieve the proper requested maximum bitrate) and a bitrate offer generator operative to offer the temporary working value in response to the maximum bitrate request if the temporary working value is a network element supported value (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate is below the lowest maximum bitrate), offer a highest network element supported value in response to the maximum bitrate request if the temporary working value is above all network element supported values (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate is below the lowest maximum bitrate), offer a lowest supported value in response to the maximum bitrate request if the temporary working value is below all network element supported values (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate is below the lowest maximum bitrate), offer a next higher network element supported value if the temporary working value is between the next higher and a next lower network element supported value and the next higher network element supported value is less than or equal to the maximum bitrate limit (see paragraph 96, the server could choose the bitrate slightly higher than the requested maximum bitrate, in the case where the requested bitrate could be adjusted to go below the

lowest maximum bitrate) and offer the next lower network element supported value if the temporary working value is between the next higher and the next lower network element supported value and the next higher network element supported value is greater than the maximum bitrate limit (see paragraph 96, the server could choose the bitrate next lowest to the requested bitrate, in the case where the requested bitrate could be adjusted to exceed the highest maximum bitrate).

For claim 26, Curcio does not explicitly teach a first comparator operative to determine if a lowest network element supported maximum bitrate value is equal to or less than a maximum bitrate limit associated with the subscriber. Arye teaches the provision of using a content switch and database, wherein the database includes entries for the content being streamed to the client, wherein each database entry includes a lookup table comprising an entry for each secondary multimedia sub-stream associated with that specific content (see figure 4, database 76 and lookup table 78). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide a set of available bitrate values associated with specific content and to provide a specific bit rate between the lowest value available and the highest value available and to be able to compare the requested value with any values in the list. The set of network element supported values is located within the table 78 of Arye. The teachings of Arye can be implemented into the method of Curcio by including the database and table in the streaming server of Curcio. The motivation to combine these teachings is that when dynamically changing the air-interface bitrate, the corresponding streams of different bitrates can be synchronized to seamlessly stream the lower or higher bitrate content to the user.

6. Claims 13-15, 22-24 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curcio in view of Arya as applied to claims 6, 17 and 26 above (respectively), and further in view of Kalliokulju et al. (US 6,618,591).

For claim 13, Curcio and Arya do not explicitly disclose determining if an SGSN supported maximum bitrate value is below a maximum bitrate limit associated with the subscriber and if the lowest network element supported maximum bitrate value is below the maximum bitrate limit associated with the subscriber. They do, however, teach the determining whether the subscriber requested bitrate is within the limits of the supported maximum bitrates. Kalliokulju, from the same field of endeavor, teaches that in a 3G UMTS network, the SGSN is an essential network component to the backbone portion of the UMTS system. The SGSN is responsible for core network functions such as control of user connections and supervises user-initiated establishment, modification, and release of connections (see column 3, lines 43-46). These functions encompass the function of bitrate allocation and guaranteeing of QoS to the subscriber. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform these functions in the SGSN of a 3G UMTS network. The motivation to combine these features is to clearly understand the functions of the essential components of a 3G UMTS system.

For claim 14, Curcio and Arya do not explicitly disclose determining if a GGSN supported maximum bitrate value is below a maximum bitrate limit associated with the subscriber and if the lowest network element supported maximum bitrate value is below the maximum bitrate limit associated with the subscriber. They do, however, teach the determining whether the subscriber requested bitrate is within the limits of the supported maximum bitrates.

Kalliokulju, from the same field of endeavor, teaches that in a 3G UMTS network, the GGSN is an essential network component to the backbone portion of the UMTS system. The GGSN is responsible for maintaining the connection of the subscriber to the internet, maintaining location information of the SGSN, and mapping of external QoS to the UMTS QoS (see column 3, lines 48-54). These functions encompass the function of bitrate allocation and guaranteeing of QoS to the subscriber. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform these functions in the GGSN of a 3G UMTS network. The motivation to combine these features is to clearly understand the functions of the essential components of a 3G UMTS system.

For claim 15, Curcio and Arya do not explicitly disclose determining if a RNC supported maximum bitrate value is below a maximum bitrate limit associated with the subscriber and if the lowest network element supported maximum bitrate value is below the maximum bitrate limit associated with the subscriber. They do, however, teach the determining whether the subscriber requested bitrate is within the limits of the supported maximum bitrates. Kalliokulju, from the same field of endeavor, teaches that in a 3G UMTS network, the RNC is an essential network component to the backbone portion of the UMTS system. The RNC is responsible for the connection of the subscriber to the network through the radio link, managing the capacity requests from the subscribers, and allocation of the resources based on those requests (see column 4, lines 58-67). These functions encompass the function of bitrate allocation and ensuring the proper bitrate is given to the subscriber. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to perform these functions in

the RNC of a 3G UMTS network. The motivation to combine these features is to clearly understand the functions of the essential components of a 3G UMTS system.

Claims 22 and 27 are rejected on the same grounds as the rejection of claim 13.

Claims 23 and 28 are rejected on the same grounds as the rejection of claim 14.

Claims 24 and 29 are rejected on the same grounds as the rejection of claim 15.

Response to Arguments

7. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Friday, 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CAA

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600